

CLAIMS

1. A strain sensor which consists of a polymer that has been irradiated with less than 1×10^{15} ions /cm² in a portion of its surface with conducting tracks deposited onto the treated portion to enable the sensor to be connected to an external electric circuit.
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2. A strain sensor as claimed in claim 1 in which the polymer is a polyimide film
3. A method of forming a strain sensor from a polymeric film which includes the steps of selectively irradiating a surface of the polymer with high energy radiation to change the composition of the polymer and increase the electrical conductivity in selected portions of the surface.
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4. A method as claimed in claim 3 in which the high energy radiation carbonizes the polymer to form conductive particles in the polymer.
5. A method as claimed in claim 3 in which high energy ions impinge on a polymer film containing precursor metal compounds, such that decomposition of the precursor leads to nucleation of conducting metal particles.
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6. A method as claimed in any preceding claim in which the polymer is a polyimide.
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7. A method as claimed in any preceding claim in which conducting tracks are deposited onto the treated polymer to enable the device to be connected to an external electric circuit.
8. A strain sensor made by the method of any one of claims 3 to 7.
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